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P/35-6 CIP

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of Krysiak et al.

Serial No.: 09/544,878 Group Art Unit: 3643

Filed: April 7, 2000 Examiner: Valenti, A.

For: SEEDING TREATMENTS

Box Response
Assistant Commissioner for Patents
Washington, D.C. 20231

## DECLARATION OF LEE HOFFMANN

I, Lee Hoffmann declare as follows:

1. I have 27 years of experience in the field of agglomeration with Feeco International.

2. I have reviewed the application of the present invention.

3. I have reviewed the Simmons patent, 4,465,017 and Wieser, EP 0010630.

4. In the world of agglomeration (particle size enlargement), there are four distinctively different types of processes: lift and tumble, pressure, liquid and thermal.

5. The process of the present invention is classified as lift and tumble, while the process disclosed and taught by Simmons and Wieser require liquid agglomeration. This can be more clearly understood when the methods and equipment used to produce such products are explained below.

6. Lift and Tumble:

This process is defined as agglomeration by tumbling (growth). Particles are adhered together by use of balling drums, pans, cones and mixers via impact and tumbling. The resultant shape is a sphere. Agitation agglomeration can use the following equipment: mixers (planetary, cone, ribbon, pintype, drum, counter-current, vertical, paddle, pugmills), Disc pelletizers (pan granulators), drum pelletizers and cone pelletizers. (Hoffmann Declaration Para 6).

7. Pressure:

Pressure agglomeration utilizes methods such as extrusion presses, pelleting machines (pelletized), piston presses (tabletting) and roller presses (briquetting, compacting). The pellets are formed by pressure imparted upon the materials. The resultant shape is a cylinder for products made with pelleting machines and extrusion presses. Pressure agglomeration can use the following equipment: roller presses (roll briquetters, roll compactors), piston/ram presses, pellet mills (ring die, flat die), extruders (auger, screw, screen, basket), tablet presses.

8. Liquid

With the liquid process, the liquid spray solidifies into a solid. Liquid agglomeration can use the following equipment: spray dryers, prill towers, spray/fluid bed, granulators, mixers for oil agglomeration.

9. Thermal

Thermal agglomeration requires the addition of an external heat source to result in particle bonding. Typical bonding include sintering, induration, calcining, and a form of flaking. This thermal flaking requires a device that spreads paste or melt as a thin film on the surface of a rotating drum: the film is then solidified by cooling water and scraped off the drum as flakes. Thermal agglomeration can use the following equipment: sinter strands, traveling grates, rotary kilns, shaft furnaces and drum/belt flakers.

10. The present invention relates to a method of making seed capsules in a single apparatus by a tumbling/agitation agglomeration operation comprising: preconditioning the seed with a binding agent while tumbling the seed. The seeds are conditioned by tumbling the seed in a bed of fine particulate to create layers of matter about the seed. The preconditioning and conditioning steps can be repeated to add additional layers to the seed.

11. The process described by Simmons is a liquid agglomeration process. Simmons describes a seed coating machine comprising an upper mixing drum wherein a liquid adhesive coating is applied to the seed where the rate of application is regulated by a valve controlled by the seed feeder. The coated seed is dried to a state of tackiness and passed to a second, lower mixing drum. A variety of powders are applied onto the tacky seed after being mixed and sifted in a screen distributor.

12. Seeds are coated with a first material such as a latex water composition. The moisture content of the latex coating is adjusted until the seeds are tacky. The tacky surfaced seeds are then coated with a dry superabsorbant chemical powder. The superabsorbant is added as a powder which adheres strongly to the tacky latex coating of

the seed. The water and superabsorbant forms a thin layer of water laden gel around the seed.

13. Simmons describes a liquid coating process and not an agitation and tumbling agglomeration operation as claimed in the present invention.

14. Wieser relates to a liquid coating process. Wieser discloses that a coating solution is conveniently applied to the seeds by spraying whilst the seeds are in motion. The coating solution has a low viscosity.

15. Wieser discloses using plant protection agents applied in very thin coatings, which are attached firmly to the seeds. By virtue of their thinness the coatings may be used for applying fungicides and other agents to large seeds with a negligible increase in their size. Therefore Wieser does not describe an agglomeration method.

16. The machines and the processes of the present invention and Wieser are different. Wieser is a coating technique, not an agitation and tumbling agglomeration technique.

17. The Examiner states it would have been obvious to modify Wieser with any of the machines listed in claims 4-17 since these are merely alternate equivalent agglomeration machines that perform the same intended function of agglomerating particles with a coating and one would select a particular agglomeration machine to satisfy different economic and time parameters and to accommodate different types of fertilizer nutrient coatings.

18. The lift and tumble agglomeration process/machine is a different and unique process from the liquid agglomeration process. As stated above different products are produced by using different agglomeration methods. Further the equipment used by liquid agglomeration and lift and tumble are different. The selection of a particular

agglomeration machine is based on the type of process and product one wishes to produce, not to satisfy different economic and time parameters or to accommodate different types of fertilizer of nutrient coatings.

19. Wieser and Simmons describe a liquid coating process and not an agglomeration operation comprising agitating and tumbling seeds with fine particulate in a apparatus for agglomeration which wraps the layer of fine particulate around the seed.

20. I hereby declare that all of the statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the patent application to which it relates or any patent issued thereon.

Dated: 3/14/03

Lee Hoffmann